256 Validation of the international physical activity questionnaire (IPAQ) in adults with cystic fibrosis

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Quantification of physical exercise in the clinic and for research is important in cystic fibrosis (CF).
Objectives: To assess the validity of the IPAQ by comparing energy expenditure (EE) measured by the IPAQ versus the accelerometer (Actigraph GT1M).
Methods: With Ethics approval we prospectively recruited stable adult patients. They wore an Actigraph secured around the waist for 7 days, at the end of which they completed the IPAQ. Criterion validity of the IPAQ was assessed by comparing the IPAQ weekly EE in kilocalories (kCal) with weekly EE from the Actigraph using spearman correlations and Bland-Altman procedures.
Results: Thirty participants (53% females) completed the assessment: mean(SD) age = 29(7) yrs, FEV1 %predicted = 61(25)%, BMI = 22(3) $kg.m^{-2}$. The median (range) EE: IPAQ = 3695 (113, 19573) kCal, Actigraph GTIM = 1669 (355, 5443) kCal. Spearman correlations of FEV1 %predicted with EE were Actigraph EE $r = 0.68$, $p < 0.001$; IPAQ EE $r = 0.28$, $p > 0.05$. Correlation of the IPAQ EE with Actigraph EE was moderate ($r = 0.46$, $p = 0.010$). There was a trend towards higher EE measured by the IPAQ than measured by the Actigraph (Wilcoxon signed ranks test: $z = -3.4$, $p = 0.001$). Bland-Altman plot showed poor agreement between energy expenditure from the two measures, with limits of agreement from −11423 to 5550 kcal.
Conclusion: The IPAQ underestimates physical activity for patients with lower EE activities and overestimates for those with higher EE in adults with CF. The IPAQ would be a useful clinical screening tool for exercise prescription and monitoring of longitudinal physical activity. Assessment of exercise for research needs more quantifiable methods such as the Actigraph.

257 Exercise referral schemes − cystic fibrosis patients' experience

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Background: The importance of exercise in maintaining a healthy lifestyle is well recognised in both health and disease. Exercise programmes in Cystic Fibrosis have been shown to have significant benefit and most patients wish to undertake regular exercise.
Objectives: Over the past year we have been referring our patients to prescribed exercise programmes at local leisure centres. We wanted to identify the uptake rate of the scheme and to evaluate patient's experience and how it might be improved.
Method: Questionnaires were sent to the first 18 patients who had been referred to the prescribed exercise programme. Replies were received from 10 patients (8 females, 2 males), age range 21–34 years. 8 of the patients attended the initial consultation but only 2 completed the 12 week course. The reasons given for not completing the course included problems with health, employment and a general lack of flexibility with the scheme.
Conclusion: Despite a disappointing completion rate of the prescribed exercise scheme, 9 of the patients enjoyed the experience and felt that they had benefited from it. Most had gone on to join another gym independently and felt that the scheme was an excellent introduction to exercise.
Suggestions as to how the experience could be improved included more flexibility with the type of exercise available and the timing of the sessions. 6 of the patients also felt that it would have been helpful for the CF physiotherapist to attend the initial consultation and first exercise session. We now hope to address these issues to try and improve the completion of the programme and help patients to continue with regular exercise.

258* The development of a musculoskeletal screening tool for adults with cystic fibrosis

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Introduction: Musculoskeletal (MSK) problems have long been identified as complications of an ageing cystic fibrosis (CF) population. MSK physiotherapy is being used more frequently in the care of patients with CF. How do we decide which patients require MSK input and when to intervene?
Objectives: To develop a screening tool to:
1. Monitor MSK problems.
2. Ensure appropriate MSK referrals.
3. Give patients the opportunity to receive preventative MSK input.

Method: A screening tool was developed by two MSK physiotherapists. The CF physiotherapy team was instructed in the use of the tool. A pilot involving 20 patients was carried out.
Results: 55% (11/20) have concerns about posture. 50% (10/20) have MSK pain. 15% (3/20) have episodes of incontinence. 5% (1/20) have neither postural concerns, pain or incontinence but had increased thoracic kyphosis and movement restriction. 5% (1/20) passed the screening tool and will be reviewed at annual review. 90% (18/20) fulfilled the requirements and were referred directly to the MSK team. 70% (14/20) received MSK physio input. 5% (1/20) did not attend their MSK appointment. 15% (3/20) refused MSK referral and opted to be screened again in one year.
Conclusion: In total 95% of patients in the pilot study failed the screening tool and were offered MSK physiotherapy. The screening tool has been modified and rolled out to all patients at annual review. These results have led to an increase in MSK intervention in the presence of postural abnormalities and spinal stiffness prior to the onset of pain. Further research is necessary to establish whether early MSK intervention is effective in preventing the onset of MSK pain.

259 The incidence of postural problems identified via the postural screening assessment used in a paediatric annual review and the relationship with the levels of exercise taken

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Objective: The consequences of postural problems and decreased fitness on respiratory function and quality of life are becoming more evident among Cystic Fibrosis adults. Using a postural screening assessment annually during childhood should help identify early signs and facilitate early advice/treatment as well as documenting levels of exercise undertaken.
Method: A retrospective review was performed of the postural screening assessment completed at annual review for children 8 years and over during the past year. The number of patients with non correctable postural problems (reduced range) was noted as well as the level of regular exercise taken. Exercise levels were graded from none, minimal, moderate to high levels.
Results: 22 patients results were reviewed, with an age range of 8–17 years. Male to female ratio 16:6. Lung function range 65–110% FEV1.
10 of the 22 patients had identified postural/movement problems. Of this group 9/10 were only participating in minimal or no exercise.
The remaining 12 patients showed no postural problems. Of this group 10/12 (83%) were participating in moderate or high levels of exercise. The remaining 2 performing minimal exercise.
There was no significant difference between the groups in male:female ratio, age range or lung function range.
Conclusion: This appears to demonstrate that the incidence of postural problems is directly related to the amount of regular exercise undertaken. 90% of the children with identified problems did little or no exercise. This reinforces the importance of exercise and the need for it to be incorporated into the patients' lifestyle from an early age.